

CLAIMS

1. An ink-jet printhead substrate on which are mounted electrothermal transducers for generating thermal energy utilized to discharge ink and driver circuits for driving said electrothermal transducers,
5 comprising:
a logic circuit for outputting a block selection signal and an element driving signal, which is for each electrothermal transducer in a selected block, at
10 a second voltage amplitude level based upon an input signal of a first voltage amplitude level; and
a driver circuit for driving the electrothermal transducers in block units based upon the block selection signal and element driving signal from said
15 logic circuit.
2. An ink-jet printhead substrate according to claim 1, wherein said logic circuit comprises:
a first converting circuit for converting input data of the first voltage amplitude level to the block
20 selection signal and element driving signal of the first voltage amplitude level; and
a second converting circuit for converting the block selection signal and element driving signal, which are output from said first converting circuit,
25 to the second voltage amplitude level.
3. An ink-jet printhead substrate according to claim 1, wherein said logic circuit comprises:

a first converting circuit for converting input data of the first voltage amplitude level to the second voltage amplitude level; and

a second converting circuit for generating a
5 block selection signal of the second voltage amplitude level and an element driving circuit for a selected block from an input signal of the second voltage amplitude level obtained from said first converting circuit.

10 4. An ink-jet printhead substrate according to claim 1, further comprising a monitor element for sensing state of said semiconductor substrate.

5. A method of controlling drive of electrothermal transducers on a substrate on which are mounted
15 electrothermal transducers for generating thermal energy utilized to discharge ink and driver circuits for driving said electrothermal transducers, comprising:

inputting an input signal of a first voltage
20 amplitude level;

outputting a block selection signal and an element driving signal, which is for each electrothermal transducer in a selected block, at a second voltage amplitude level based upon the signal
25 that has been input; and

driving the electrothermal transducers in block units based upon the block selection signal and

element driving signal from said logic circuit.

6. An ink-jet printhead comprising:

discharge ports for discharging ink; and

a substrate on which are mounted electrothermal

5 transducers provided to correspond to said discharge

ports, and driver circuits for driving said

electrothermal transducers, wherein said substrate includes:

a logic circuit for outputting a block selection
10 signal and an element driving signal, which is for
each electrothermal transducer in a selected block, at
a second voltage amplitude level based upon an input
signal of a first voltage amplitude level; and

a driver circuit for driving the electrothermal
15 transducers in block units based upon the block
selection signal and element driving signal from said
logic circuit.

7. An ink-jet printhead cartridge comprising an ink-
jet printhead and an ink tank filled with ink for

20 being supplied to said ink-jet printhead;

said ink-jet printhead having discharge ports for
discharging ink and a substrate on which are mounted
electrothermal transducers provided to correspond to
said discharge ports, and driver circuits for driving
25 said electrothermal transducers, wherein said
substrate includes:

a logic circuit for outputting a block selection

signal and an element driving signal, which is for each electrothermal transducer in a selected block, at a second voltage amplitude level based upon an input signal of a first voltage amplitude level, and a
5 driver circuit for driving the electrothermal transducers in block units based upon the block selection signal and element driving signal from said logic circuit.

8. An ink-jet printing apparatus comprising an ink-
10 jet printhead and a circuit for transmitting a control signal to said printhead, said ink-jet printhead having discharge ports for discharging ink and a substrate on which are mounted electrothermal transducers provided to correspond to said discharge
15 ports, and driver circuits for driving said electrothermal transducers, wherein said substrate includes:

a logic circuit for outputting a block selection signal and an element driving signal, which is for
20 each electrothermal transducer in a selected block, at a second voltage amplitude level based upon an input signal of a first voltage amplitude level; and

a driver circuit for driving the electrothermal transducers in block units based upon the block
25 selection signal and element driving signal from said logic circuit.